CLAIMS

1. A method for analyzing a media path in a packet switched network, comprising:

varying a Time To Live (TTL) value in media trace packets to intentionally cause faults at intermediate nodes in the media path; and

analyzing fault notices received from the intermediate nodes in the media path caused by the media trace packets.

2. The method according to claim 1 including formatting the media trace packets as a Real Time Protocol (RTP) payload packet that travel along the same media path as RTP payload packets containing media content.

3. The method according to claim 1 including:

conducting a media signaling protocol that establishes the media path between a source and destination endpoint;

using a same media header format for the media trace packets and media payload packets; and

setting a first set of TTL values in the media trace packets to a low enough value to cause a fault condition in one of the intermediate modes in the media path.

4. The method according to claim 3 including setting a second set of TTL values so that at least some of the media trace packets reach the destination endpoint causing the destination endpoint.

5. The method according to claim 4 including setting a member bit in the media trace packets that cause the destination endpoint to generate a media path analysis report for the media trace packets.

6. The method according to claim 5 including using a Real Time Control Protocol (RTCP) report for the media path analysis report.

7. The method according to claim 5 including determining whether or not to transmit a media stream over the media path according to contents of the media path analysis report.

8. The method according to claim 1 including causing the media trace packets to play out low volume noise when received by a destination endpoint.

9. The method according to claim 1 including:

setting a first TTL value in a first set of the media trace packets that cause a first intermediate node in the media path to reject the first set of media trace packets and send back a first rejection notice; and

setting a second larger TTL value in a second set of media trace packets that allow the first intermediate node to forward the second set of media trace packets while causing a second intermediate node in the media path to reject the second set of media trace packets and send back a second rejection notice.

10. A network processing device, comprising:

a processor establishing a media session over an Internet Protocol (IP) network and modifying a Time To Live (TTL) value for a media trace packet that intentionally causes rejection by an intermediary node used in the media session.

11. The network processing device according to claim 10 wherein the TTL value is automatically decremented by each intermediary node receiving the media trace packet and any intermediary node decrementing the TTL value to zero automatically rejects the media trace packet and sends back a rejection notice.

12. The network processing device according to claim 10 wherein the processor receives a rejection response for the media trace packet and either modifies a media path for the media session or modifies the TTL value according to the rejection response.

13. The network processing device according to claim 10 wherein the processor sends out media payload packets containing an actual media payload with unmodified TTL values, the processor interjecting the media trace packets in the media session with the media payload packets when a trigger event is detected.

14. The network processing device according to claim 13 wherein the processor identifies the trigger event from a Real Time Control Protocol (RTCP) report.

15. The network processing device according to claim 10 wherein the processor modifies the TTL values in media no-op packets that are formatted as media payload packets that contain no actual media payload.

16. The network processing device according to claim 10 wherein the media session is a Real Time Protocol (RTP) media session and the media trace packets are formatted as RTP packets.

17. An intermediary node in an Internet Protocol (IP) media session, comprising:

a processor configured to receive media payload packets during a media session containing Time To Live (TTL) values intentionally set so the media payload packets are discarded prior to being received by a destination endpoint in the media session, the processor decrementing the TTL values, discarding the media payload packets when the decremented TTL values are zero, and sending out a rejection notice for any discarded media payload packets.

18. The intermediary node according to claim 17 wherein the media payload packets are Real Time Protocol (RTP) packets that do not contain a media payload.

19. The intermediary node according to claim 18 wherein the processor also receives conventional RTP packets during the same media session that contain an actual RTP media payload and large enough TTL values to allow the RTP packets to reach the destination endpoint, the processor decrementing the TTL values in the conventional RTP packets and forwarding the conventional RTP packets toward the destination endpoint.

20. The intermediary node according to claim 18 wherein the RTP packets with the modified TTL values enable passage through a firewall between a source endpoint and a destination endpoint for the media session.

21. A system for analyzing a media path in a packet switched network, comprising:

means for varying a Time To Live (TTL) value in media trace packets to intentionally cause faults at intermediate nodes in the media path; and

means for analyzing fault notices received from the intermediate nodes in the media path caused by the media trace packets.

22. A system according to claim 21 including means for formatting the media trace packets as a Real Time Protocol (RTP) payload packet that travel along the same media path as RTP payload packets containing media content.

23. A system according to claim 21 including:

means for conducting a media signaling protocol that establishes the media path between a source and destination endpoint;

means for using a same media header format for the media trace packets and media payload packets; and

means for setting a first set of TTL values in the media trace packets to a low enough value to cause a fault condition in one of the intermediate modes in the media path.

24. A system according to claim 23 including means for setting a second set of TTL values so that at least some of the media trace packets reach the destination endpoint causing the destination endpoint.

25. A system according to claim 24 including means for setting a member bit in the media trace packets that cause the destination endpoint to generate a media path analysis report for the media trace packets.

26. A system according to claim 25 including means for using a Real Time Control Protocol (RTCP) report for the media path analysis report.

27. A system according to claim 25 including means for determining whether or not to transmit a media stream over the media path according to contents of the media path analysis report.

28. A system according to claim 21 including means for causing the media trace packets to play out low volume noise when received by a destination endpoint.

29. A system according to claim 21 including:

means for setting a first TTL value in a first set of the media trace packets that cause a first intermediate node in the media path to reject the first set of media trace packets and send back a first rejection notice; and

means for setting a second larger TTL value in a second set of media trace packets that allow the first intermediate node to forward the second set of media trace packets while

causing a second intermediate node in the media path to reject the second set of media trace packets and send back a second rejection notice.

30. A computer readable medium for analyzing a media path in a packet switched network, comprising:

varying a Time To Live (TTL) value in media trace packets to intentionally cause faults at intermediate nodes in the media path; and

analyzing fault notices received from the intermediate nodes in the media path caused by the media trace packets.

31. A computer readable medium according to claim 30 including formatting the media trace packets as a Real Time Protocol (RTP) payload packet that travel along the same media path as RTP payload packets containing media content.

32. A computer readable medium according to claim 30 including:

conducting a media signaling protocol that establishes the media path between a source and destination endpoint;

using a same media header format for the media trace packets and media payload packets; and

setting a first set of TTL values in the media trace packets to a low enough value to cause a fault condition in one of the intermediate modes in the media path.

33. A computer readable medium according to claim 32 including setting a second set of TTL values so that at least some of the media trace packets reach the destination endpoint causing the destination endpoint.

34. A computer readable medium according to claim 33 including setting a member bit in the media trace packets that cause the destination endpoint to generate a media path analysis report for the media trace packets.

35. A computer readable medium according to claim 34 including using a Real Time Control Protocol (RTCP) report for the media path analysis report.

36. A computer readable medium according to claim 34 including determining whether or not to transmit a media stream over the media path according to contents of the media path analysis report.

37. A computer readable medium according to claim 30 including causing the media trace packets to play out low volume noise when received by a destination endpoint.

38. A computer readable medium according to claim 30 including:

setting a first TTL value in a first set of the media trace packets that cause a first intermediate node in the media path to reject the first set of media trace packets and send back a first rejection notice; and

setting a second larger TTL value in a second set of media trace packets that allow the first intermediate node to forward the second set of media trace packets while causing a

second intermediate node in the media path to reject the second set of media trace packets and send back a second rejection notice.